



Kahanoff Centre

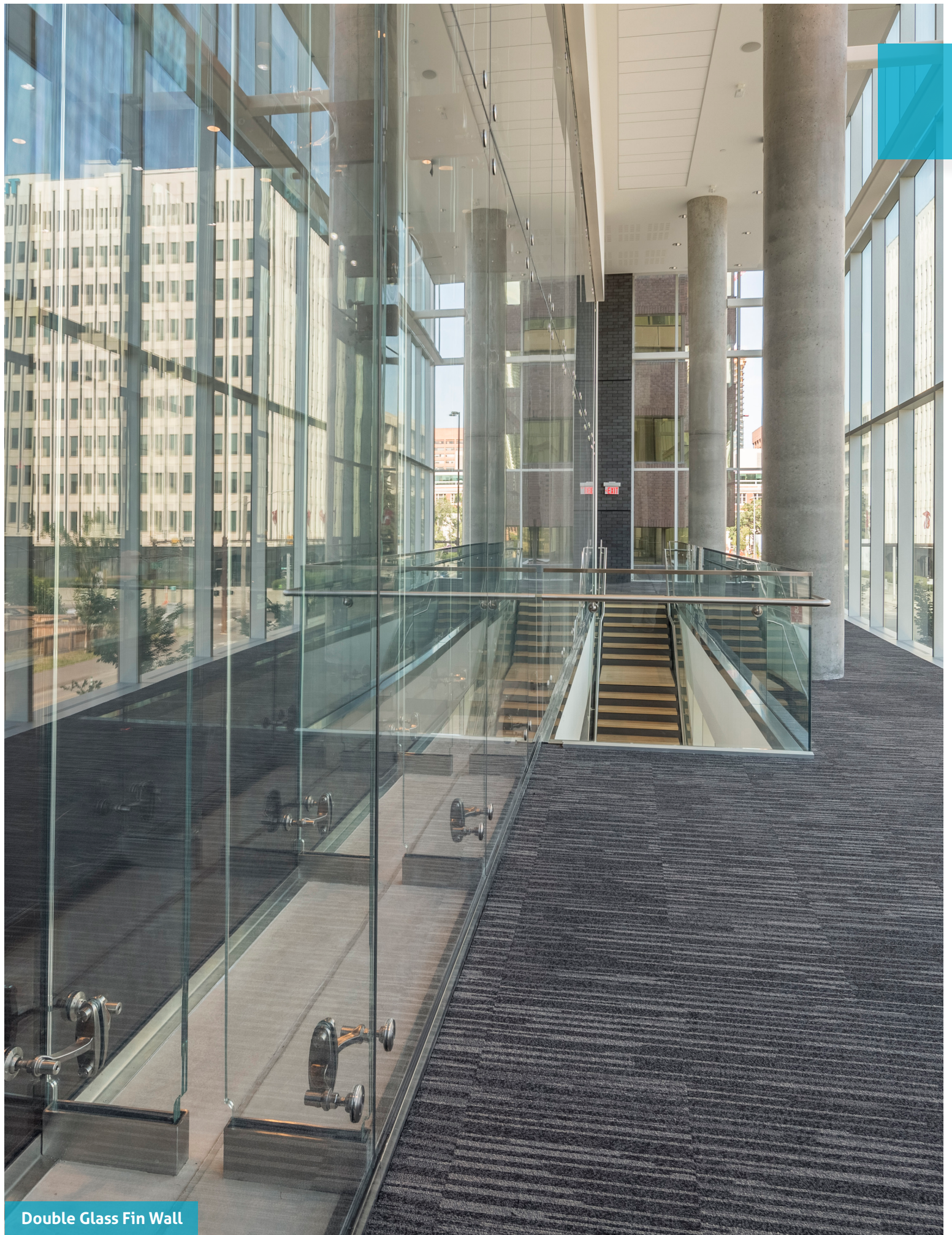
Glass Enclosed Dance Studio

Sound Attenuating, Double Glass Fin Wall
Calgary, Alberta





Kahanoff Centre - Calgary, Alberta



Double Glass Fin Wall

Kahanoff Centre

Project Overview

Project Name

Kahanoff Centre

Location

Calgary, Alberta

Design Overview

This dance centre needed a crystal-clear sound-proofed partition to separate the studio from the surrounding conference centre.

Architect

Dialog

Glazing Contractor

Alberta Glass

Year Completed

2016

Products Supplied

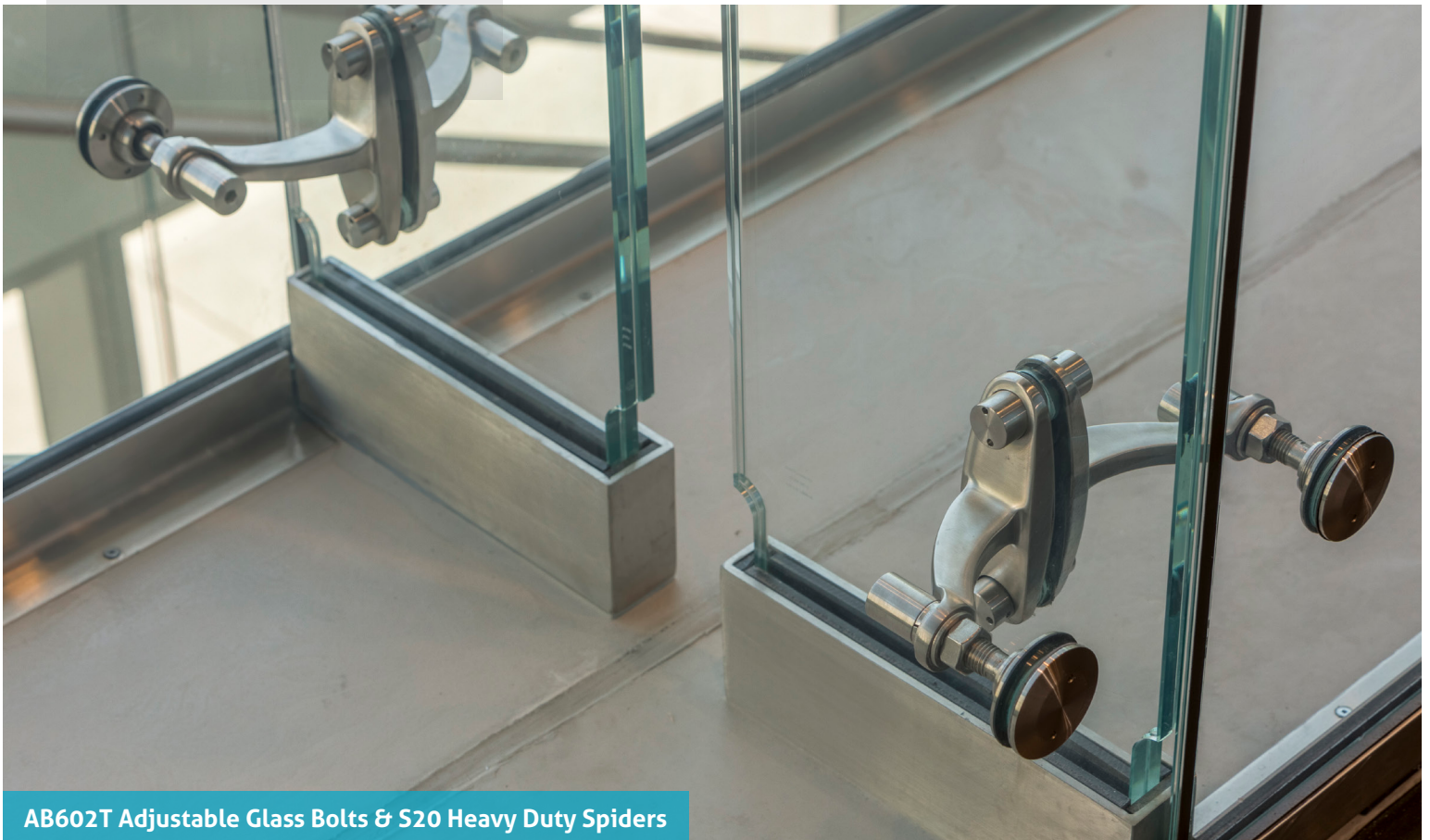
AB602T Adjustable Glass Bolts, S20 Heavy Duty Spiders, Custom Splice Plates, Custom Fin Shoes

Design Services

Glazing System, Hardware Design, Shop Drawings, Glass Fabrication Drawings, Engineering

Sector

Civic + Community



AB602T Adjustable Glass Bolts & S20 Heavy Duty Spiders





Kahanoff Centre

The art of soundproofing a dance studio

This space is home to a series of meeting rooms and a not-for-profit dance studio. To ensure all building residents were happy, the sound transfer between rooms needed to be strongly reduced making this a key design constraint. The dance studio floor and feature glass wall were designed to prevent sound transfer to other areas. This meant that the type of glass, supporting hardware, and support conditions had to be taken into account when designing this system. The result was the construction of a sound attenuating, back-to-back fin wall. Each wall had to be completely separated from the other in order to prevent any sound and vibration transfer. The gap between the fins, the space between concrete slabs and other system components were critical factors in preventing sound waves from passing through the space. The installation method and material choices were critical factors.

"The project began with the need to acoustically separate Kahanoff Centre's dance studio from the rest of the building."

Soundproof

To ensure the dance studio was acoustically isolated from the surrounding rooms, the entire area was built on a floating slab.

This meant that one glass wall was built on the studio slab while the other was mounted on a different one. The two slabs were sealed with an acoustic sealant to complete the separation. The exterior and interior glass walls were constructed with varying glass thicknesses in order to attenuate sounds of different frequencies. The glass makeup was chosen to be low iron (for extra clear glass) and laminated for further sound reduction. There was also a need to design the wall system to act as a guard for safety reasons.



A vertical image on the left side of the page shows a close-up of a glass fin and a metal splice plate. The glass fin is a light blue color and is mounted on a dark metal frame. The splice plate is a circular, brushed metal plate with a central bolt hole. The background is a light gray.

Project Hardware

Kahanoff Centre included the supply of standard glass bolts (AB602T) and standard side mounted spider connections (S20 Spiders). The fin shoes were designed to match the specifications of the glass fin. Custom splice plates and built-up channels were also supplied.

AB602T Glass Bolts

The AB602T is an articulating, 60mm front-mounting glass bolt that allow the final panels to be installed from the front or back of the wall. The same bolts also accommodate varying sizes of glass which kept the glass fins consistent across the project.

Custom Splice Plates and S20 Spider Fittings

Custom, stainless steel splice plates include countersunk bolting assemblies which compliment the sleek design. No protruding bolts were required at the fin connection with this design. Heavy duty S20 spiders (two and four arm connections) had no problem supporting the 9 feet tall face glass panels.

Fin Shoe and Custom Glass Channel

A stainless steel u-channel holds the face glass but require the fixing screws to be anchored away from the edge of the slab (to prevent chipping). A foam tape and wedge gasket seal the channel. The fin shoe was made to fit the fin and was finished as brushed stainless steel.

Installation Considerations

Fin Installation

Structural beams were installed above the system to take the load of a glass fin wall that hangs from above. Stella's Nutsert (Rivet Nut) allowed the fins to easily connect to the thin walled HSS.

Face Glass Conditions

The studio is backed onto a staircase which require the face glass to act as a guard. The varying thicknesses of glass served a dual purpose of reducing sound transmission and acting as a safety barrier. The same glass bolts were used on both walls for ease of construction.

U-Channel Installation

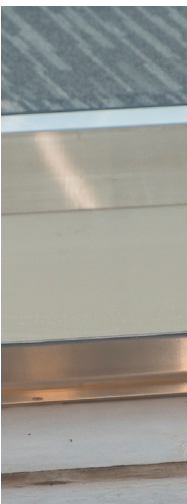
A built-up channel was designed to capture the face glass around the edges. Two custom "L" shaped angles were overlapped to provide sufficient edge distance when fixing to the slab. A combination of foam tape, smooth gaskets, hard shims and adhesives were utilized to create a functional slip joint which mitigated the transmission of sound and ingress of debris into the enclosed space.

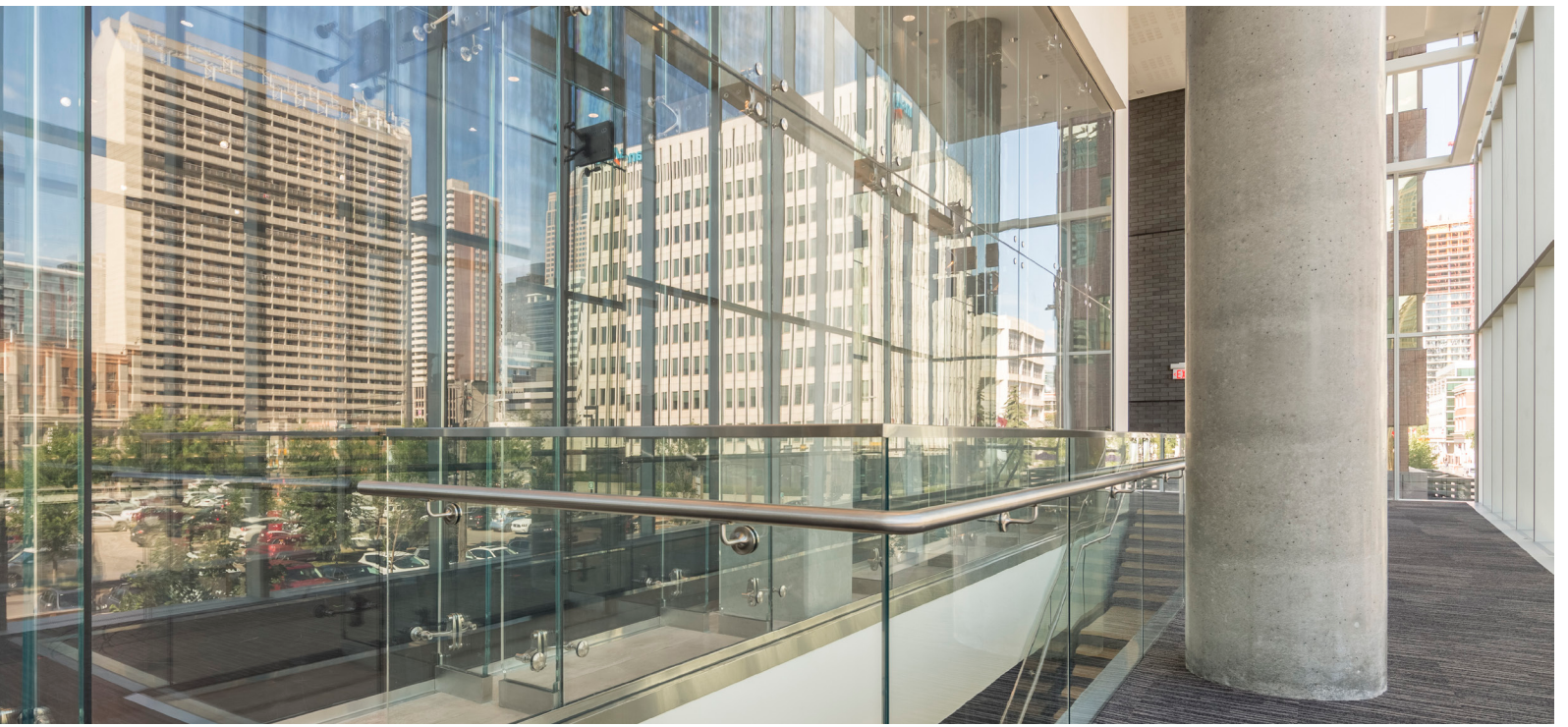
Face Glass Installation

To make up the difference in glass thicknesses, the adjustable back plate on the AB602 allowed the fins on both walls to be identical. This meant less confusion on site and less error during fabrication. Without access to the inside when installing the final wall, front mounting hardware was required. The face of the bolt could be removed and tightened from the front and the same considerations were given to the surrounding channels.

Gaskets and Silicone

Special foam silicone extrusions were created to seal the joints from the outside. Custom rollers pushed the gasket to exactly the right depth as there was no access to the back of the system with all the glass in place.





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